

REMARKS

Claims in the Application. Claims 1, 20, 41 and 57 have been amended. Claims 60-65 have been added to this application. Accordingly, Claims 1-65 are active in this application. Reconsideration is respectfully requested.

Examiner's Rejection of the Claims Over *Constien*. The Examiner has rejected Claims 1, 16, 26, 33 and 34 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,582,250 ("*Constien*"). This ground for rejection is respectfully traversed.

In the Supplemental Office Action, the Examiner states that the rejected claims of Applicants "fails to render patentable distinction over the proppant of '250 reference, in that the injection of proppant in the field operation is known to be delivered in batches, which are injected in different stages." Applicants respectfully disagree.

Constien is directed to a process of creating a fracture extending outwardly from a well by overbalanced perforating. The method of overbalanced perforating can most easily be understood by review of U.S. Patent No. 5,551,344, copy attached. As discussed therein and as illustrated in FIGs. 2a and 2b, perforating gun 20 is attached near the bottom joint of tubing 14 and a seal across packer 16 is obtained to protect casing 12 from the high pressures applied to the perforations. Pressure inside tubing 14 is increased by introduction of pumped fluid via pump 44. When the pressure inside the tubing is greater than the fracture pressure of the formation, the perforating gun is fired. The fracture is created by the surge in hydraulic pressure caused by the firing of the perforating gun; the perforating gun opening a pathway through the metal casing for the pressure to move. See line 62 of column 4 through line 39 of column 5. The brine containing the proppant is introduced into the wellbore such that after the perforating gun is fired and the pressure starts to dissipate, the brine may be carried into the formation. See col. 5, ll. 45-55 of *Constien*. Unlike conventional hydraulic fracturing processing (employed by Applicants), overbalanced perforating is a single operation. (Note bridging paragraph of columns 2 and 3 of the '344 Patent.) *Constien* is therefore not directed to the injection of proppant delivered in batches or proppant injected in different stages and none of the claims of Applicants are anticipated by *Constien*.

Claim 16 of Applicants specifically recites hydraulic fracturing wherein two proppants (one of which is an ULW proppant) are present in the proppant stage being introduced into the

formation. *Constien* does not disclose introduction of a proppant stage containing two proppants into the formation.

Claim 26 of Applicants recites hydraulic fracturing wherein two proppant stages are introduced into the formation; the first proppant stage having a proppant with density greater than 2.45 g/cc and the second proppant stage having a proppant with density less than or equal to 2.45 g/cc. *Constien* does not recite introduction of two proppant stages having proppants of different densities, much less a proppant stage having a proppant with density greater than 2.45 g/cc and a second proppant stage having a proppant with density less than or equal to 2.45 g/cc.

In Claim 33 of Applicants, a pad fluid containing a first proppant stage is introduced into the formation at a pressure sufficient to initiate the fracture. A second proppant stage is then introduced into the fracture. *Constien* does not anticipate Claim 33. First, *Constien* does not disclose use of two proppant stages. Second, *Constien* does not disclose initiation of a fracture using a pad fluid. *Constien* does not disclose a pad fluid; instead, in *Constien* the fracture is initiated by the action of the perforating gun. Claim 33 of Applicants specifically recites "pumping a pad fluid containing a first proppant stage into the formation at a pressure sufficient to initiate a fracture". Note col. 3, ll. 27-38 of *Constien*:

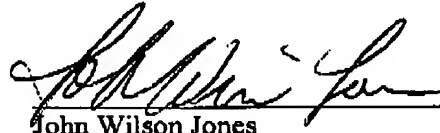
At the time of firing the perforating charges, it is desirable to execute this process with a fluid in the wellbore which contains a particulate proppant material suspended in the fluid. This allows the creation of small fractures which are packed with proppant. These fractures remain open after the hydraulic pressure which created them is dissipated and form a conductive pathway for reservoir fluids to enter the wellbore. In accordance with the present invention, a system which comprises a low density proppant material and brine fluid is placed into the wellbore and the propping agent is suspended in the fluid until the overpressured perforating process is carried out. (Emphasis added.)

Claim 44 of Applicants recites two distinct proppant stages each having an ULW proppant. *Constien* does not disclose the use of two proppant stages. As stated *supra*, in *Constien* the fracturing process is performed in a single step. While col. 2, ll. 62-65 of *Constien* references the optional subsequent injection of "fluid", such fluid is not disclosed as containing a proppant, much less as containing the claimed ULW proppant of Applicants. The presence of a proppant would render a proppant-laden slurry, not a fluid. The referenced fluid is presumed to be the high shear thinning and low viscosity fluid conventionally used in perforating operations, as discussed in col. 2, ll. 18-30.

Conclusions. The Examiner is encouraged to telephone the undersigned in order to expedite the prosecution of this application. It is believed that the claims to the amendments and the remarks expressed herein put this application in condition for allowance. Early notice to that effect is earnestly solicited.

Respectfully submitted,

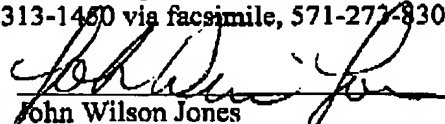
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